

Notice of Allowability

Application No.

10/729,658

Applicant(s)

LIU, PING-CHEN

Examiner

Terry L. Englund

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amdt (Jul 5, 2005).
2. ☒ The allowed claim(s) is/are 1-9, 11-13, 15-23, and 25-48 (now renumbered as 1-45, respectively for printing purposes).
3. ☒ The drawings filed on 05 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.


TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to the applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Claim 15, line 1: changed "14" to --11--; and

Claim 32, line 2: changed "the each of" to --each of the--.

Claim 15 as amended to address/correct an inadvertent oversight, wherein when claim 14 was cancelled by the applicant's amendment, the dependency of claim 15 should have been changed since a claim depending on a cancelled claim is indefinite. The change to claim 32 corrects a minor oversight related to the applicant's amended claim adding the phrase "each of" after "the" instead of prior to it.

RESPONSE TO AMENDMENT

The amendment submitted on Jul 5, 2005 has been reviewed and considered with the following results:

The amended paragraphs overcame the previous Office Action's objections to the disclosure, which have now been withdrawn.

The cancellation of claims 10, 14, and 24 has rendered their respective objection, and/or rejection, moot.

The amended claims overcame the objections of claims 2-9, 12-13, 15-18, 20-23, 25-33, and 35-41 as described in the previous Office Action. Therefore, those objections have also been

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withdrawn. Although amended claim 32 created a new objection, this was addressed/corrected by the Examiner's Amendment.

The amended claims also overcame the rejections of claims 12-13, 20-23, 25, 30, 32, 35-40, and 42-48 under 35 U.S.C. 112. These rejections have now all been withdrawn. However, the applicant's cancellation of claim 14 created a new problem since claim 15 depended on the cancelled claim. This problem was also addressed/corrected by the Examiner's Amendment.

By adding the "means for selectively bypassing" limitation into claim 1, the rejections of claims 1-2 under 35 U.S.C. 102(b), with respect to Taub et al., were overcome and those prior art rejections have been withdrawn. Taub shows/discloses the first/second charge pump means being selectively coupled in series and in parallel, wherein it is understood (e.g. from the applicant's comments, disclosure, and figures) that a bypassed means (e.g. circuit) is effectively removed from operation. For example, in the applicant's Fig. 1, second pump stage 120 is completely bypassed by the use of switching circuit 130, wherein output OUTA of first pump stage is removed from input INB of second pump stage 120, and coupled to output OUTB/VNN of charge pump circuit 100. This is further supported by paragraph 0025 of the disclosure, citing "In this configuration, only the first charge pump 110 is used to generate the negative output voltage on VNN." Therefore, if one charge pump stage is coupled in parallel with another charge pump stage, and both contribute to the output under this configuration, neither of these stages is considered as being bypassed by the other stage.

There is no known objection or rejection remaining within the present application.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

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None of the prior art references show or disclose the charge pump circuit, or method for generating pumped voltages, as recited within independent apparatus claims 1, 11, 19, and 34, and independent method claim 42. More specifically, none of the references clearly shows or discloses: 1) the first/second charge pump means responsive to a different set of clock signals, and a means selectively bypasses the second charge pump means, as now recited in claim 1, upon which claims 2-9 depend; 2) the first/second charge pump means respond to four/two phase oscillation signals, and are connected to a switching circuit having first-third, and control, terminals as recited within claim 11, upon which claims 12-13, and 15-18 depend; 3) a plurality of charge pumps, selectively connected in parallel, wherein each charge pump comprises first/second charge pump means responsive to a different set of clock signals, and a means for selectively coupling the first/second charge pump means in parallel as recited within claim 19, upon which claims 20-23, and 26-33 depend; 4) a charge pump circuit comprises the specific combination of first/second charge pumps, first switching circuit, and plurality of second switching circuits as recited within claim 34, upon which claims 35-41 depend; and 5) the selective connecting of a plurality of charge pump circuits in parallel, wherein first/second charge pump circuits, within each charge pump circuit, are selectively connected in series as recited within claim 42, upon which claims 43-48 depend. Although the selective connecting of charge pump circuits in parallel, and in series, are well known (e.g. series connected charge pump circuits will provide a means for additional boosting of the final output voltage, wherein parallel circuits will provide means for reducing output ripple, and/or increasing output current), there is no strong motivation to modify or combine any prior art reference(s) to ensure all the

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limitations, as recited within any of the independent claims, are met. Therefore, the claims are deemed patentably distinct over the prior art of record.

Claims 1-9, 11-13, 15-23, and 25-48 are allowed, and have been renumbered as claims 1-45, respectively for printing purposes. The renumbering takes into account the cancellation of claims 10, 14, and 24.

Any comments considered necessary by the applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication, or communications, from the examiner should be directed to Terry L. Englund whose telephone number is (571) 272-1743. The examiner can normally be reached Monday-Friday from 7 AM to 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (571) 272-1740.

The new central official fax number is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Terry L. Englund

16 September 2005